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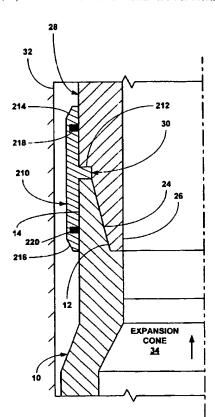
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[Continued on next page]

(54) Title: PROTECTIVE SLEEVE FOR THREADED CONNECTIONS FOR EXPANDABLE LINER HANGER



(57) Abstract: A tubular sleeve (210) is coupled to and overlaps the threaded connection (12, 14) between a pair of adjacent tubular members (14, 16).

GM, HR, HU, ID, IL, IN. IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV. MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/10144

		·	C170303/10144	j	
A. CLASSIFICATION OF SUBJECT MATTER					
IPC(7) US CL	: E21B 19/16 : 166/380, 85.3, 309, 387, 72, 73,; 285/382.7, 3	no			
	International Patent Classification (IPC) or to both nat	onal classification and I	PC ·		
	DS SEARCHED				
Minimum doe	cumentation searched (classification system followed by	classification symbols			
U.S. : 10	66/380, 85.3, 309, 387, 72, 73, 187, 195, 206, 207, 2	12. 216. 217: 285/382.	7. 398. 55. 388.1	ì	
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None None	on searched other than minimum documentation to the	extent that such docume	nts are included in	the fields searched	
None					
					
Electronic da	ta base consulted during the international search (name	of data base and, where	practicable, sear	ch terms used)	
EAST			-	·	
C. DOC	UMENTS CONSIDERED TO BE RELEVANT			· · · · · · · · · · · · · · · · · · ·	
Category *	Citation of document, with indication, where ap	propriate, of the relevan	nt passages	Relevant to claim No.	
A	US 6,405,761A (SHIMIZU et al) 18 June 2002, see	entire document		1-144	
			ļ		
A	US 5,971,443 A (NOEL et al) 26 October 1999, see	entire document		1-144	
A	US 5,309,621 A (O'DONNELL et al)10 May 1994,	see entire document		1-144	
	00 5,505,021 11 (0 501112112 of all)10 1111 1554,	see entire document		1-144	
Α	US 3,997,193 A (TSUDA et al) 14 December 1976, see entire document		1-144		
A	US 3,989,280 A (SCHWARZ) 02 November 1976, see entire document		1-144		
A	US3,834,742 A (MCPHILLIPS) 10 September 1974, see entire document		1-144		
•	(Welling to September 1974)	see entire document		1-144	
A	US 3,579,805 A (KAST) 25 May 1971, see entire do	cument		1-144	
A	US 2,647,847 A (BLACK et al) 04 August 1953, see entire document 1-144		1-144		
x	US 4,693,498 A (BAUGH et al) 15 September 1987	see Fig. 2a and 2h	1	64	
	TOU 4,000,400 A (DAUGIT Ct at) 15 September 1907, See Fig. 2a and 20			04	
			ł		
	<u> </u>				
Further	r documents are listed in the continuation of Box C.	See patent fa	mily annex.		
	Special categories of cited documents:			rnational filing date or priority	
Ī	at defining the general state of the art which is not considered to be	date and not in	conflict with the applic ory underlying the inve	ation but cited to understand the	
	ular relevance				
"E" carlier ap	pplication or patent published on or after the international filing date			claimed invention cannot be red to involve an inventive step	
	at which may throw doubts on priority claim(s) or which is cited to	when the docum	ment is taken alone		
establish	the publication date of another citation or other special reason (as			claimed invention cannot be	
specified	U			when the document is documents, such combination	
"O" documen	it referring to an oral disclosure, use, exhibition or other means		to a person skilled in the		
	The same that th			family	
	priority date claimed				
Date of the actual completion of the international search Date of mailing of the international search report 30 July 2003 (30 07 2003)			ch report		
30 July 2003 (30.07.2003) 31 UC 1 2003			ZUU3		
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Form PCT/ISA/210 (second sheet) (July 1998)

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INTERNATIONAL SEARCH REPORT

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT			
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	
х	US 6,275,556 A (KINNEY et al) 14 August 2001, see Fig, 3	64	
		ļ	

Form PCT/ISA/210 (second sheet) (July 1998)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/10144

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)				
This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:				
i. 🗌	Claim Nos.: because they relate to subject matter not required to be searched by this Authority, namely:			
2.	Claim Nos.: because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:			
3.	Claim Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).			
Box II Ot	eservations where unity of invention is lacking (Continuation of Item 2 of first sheet)			
This Internat	ional Searching Authority found multiple inventions in this international application, as follows: ontinuation Sheet			
1.	As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:			
4. Remark on	No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: Protest The additional search fees were accompanied by the applicant's protest. No protest accompanied the payment of additional search fees.			

Form PCT/ISA/210 (continuation of first sheet(1)) (July 1998)

INTERNATIONAL SEARCH REPORT		
BOX II. OBSERVATIONS WHERE UNITY OF INVENTION IS LACTHE inventions listed as Groups I-IV do not relate to a single general inventive con 13.2, they lack the same or corresponding special technical features for the follow deforming a tubular with plastic deformation whereas Group II does not make such tubular subjected to radial deforming and plastic deformation (in eight of the indep well. The groups are further distinguished in whether a flanged sleeve is used in a internal or external, whether the connecting tubes are threaded or not, inter alia su	incept under PCT Rule 13.1 because, under PCT Rule ing reasons: Group I comprises the method of radially in a deformation. Groups III and IV comprise using a pendent claims) in completing a geothermal energy making up a tubular string, whether the flange is	
This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.		
 Claims 1-63, comprising 5 independent claims, drawn to a "Method". Claims 64-127, comprising 5 independent claims, drawn to an "Apparatus" Claims 124-141, comprising 10 independent claims, drawn to a "Method at IV. Claim 142, drawn to a "Method of Testing." 		

Form PCT/ISA/210 (second sheet) (July 1998)

PCT/US03/10144